Chip heaters

Basic values:

Parameter	Value
Dimensions	36 x 35 x 3.5 mm
Heated area	36 x 35 x 3.5 mm
T_{max}	500 °C

Details of Standard:

Description

A rated power of more than 1 700 W with external dimensions of only 35 mm x 36 mm x 3.5 mm: The heating element of the CN type allows the highest heating rates, for example for flip-chip bonding applications.

* The actual power depends on resistance, temperature and voltage.

Parameter	Value
Article no.	FLE 100 067
Resistance @ 20 °C	30 Ω ±25 %
Nominal voltage	230 V
Nominal power @ 20 °C	1 760 W*

Basic Material

Parameter	Scale unit	Si_3N_4
max. temperature (T_{max})	°C	1 000
thermal conductivity (l)	W/mK	40
temperature shock resistance (ΔT)	K	500
emissivity (1 100 °C) (ε)	-	0.96
Young's modulus (E)	GPa	320
bending strength (δ_{BB})	MPa	400
compressive strength (δ_D)	MPa	2 000
coefficient of thermal expansion (α)	10^{-6} K^{-1}	3
density (g)	g/cm³	3.21
specific heat (c_p)	J/kgK	750
porosity (100 - % t.D.)	%	0
critical stress intensity factor (K_{Ic})	MPa $m^{½}$	6
Weibull – modulus (m)	-	7.9

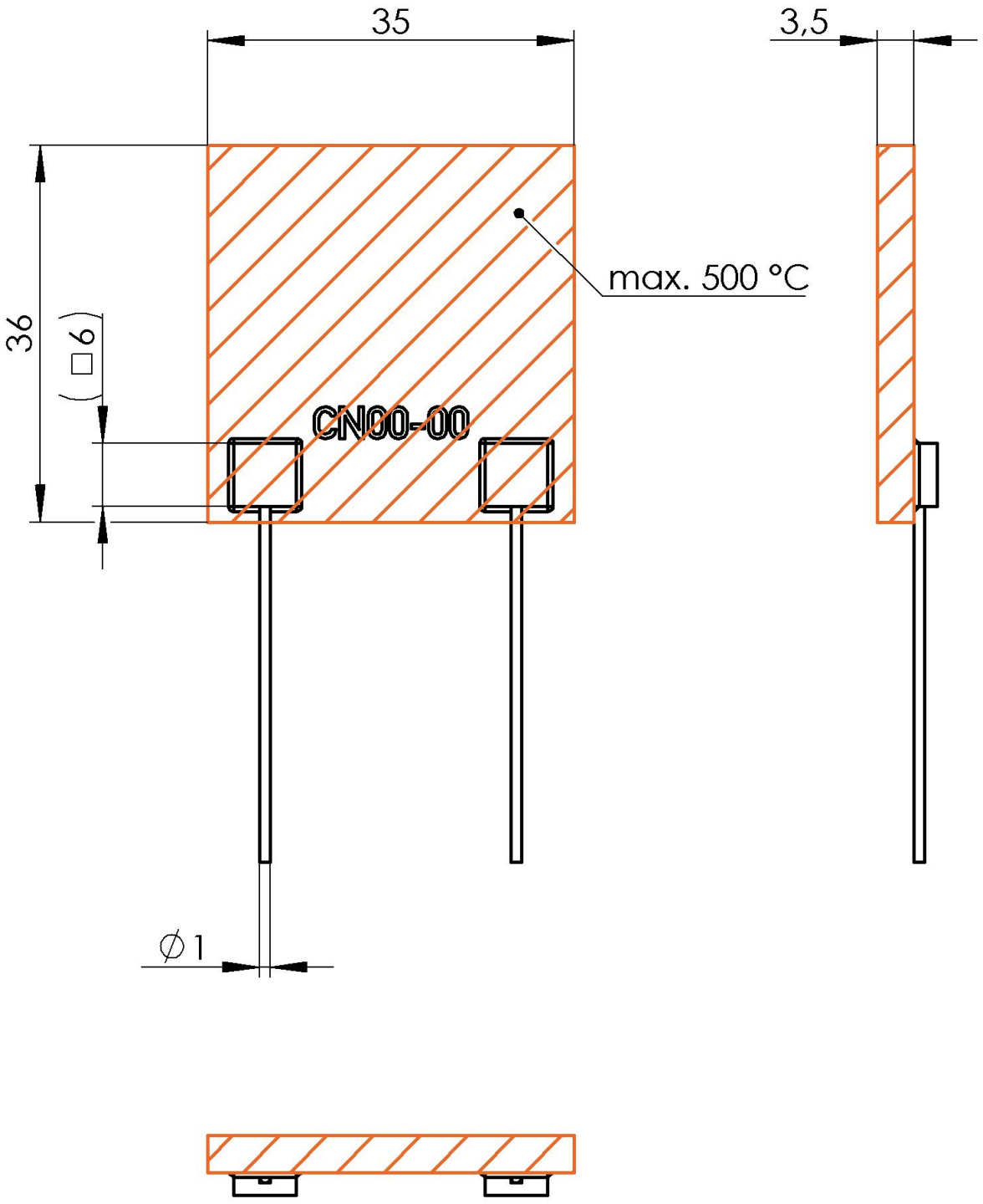
The thermal shock resistance depends on the geometric shape of the heater.

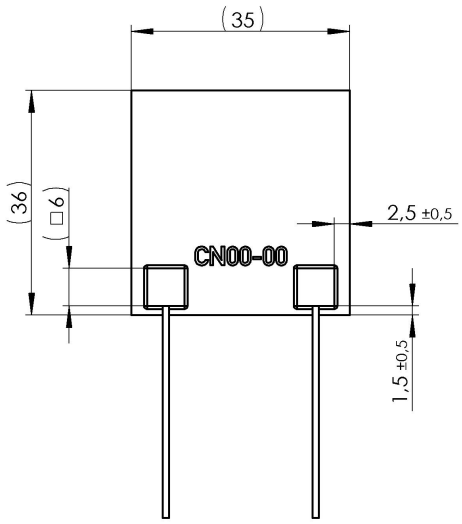
Electrical parameters

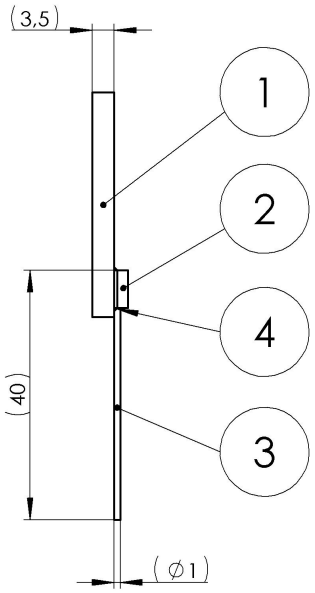
Parameter	Scale unit	Si_3N_4
resistivity	Ω cm	$5 \cdot 10^{-3}$ - $5 \cdot 10^{-1}$
isolation resistivity	Ω mm (20 °C)	10^{13}
dielectric strength	kV/mm	25

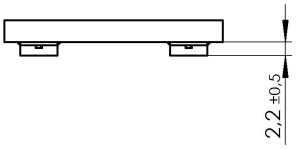
Emission spectrum

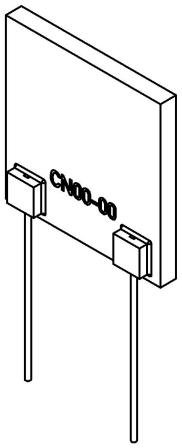
Fully ceramic heating elements are long-wave infrared heaters with a maximum emission of 5 to 10 µm and a radiation coefficient of ε > 0.9.


35
3,5
36
□6
max. 500 °C
CN00-00
∅1









TOLERANCES: Toleranzen siehe Einzelteil	FINISH:	DEBUR AND BREAK SHARP EDGES
DO NOT SCALE DRAWING		
MATERIAL: siehe Stueckliste		

REV.	REVISION NO.	DATE	NAME
1.0	-	12.08.2015	

	NAME	DATE
DESIGNED	R. Mielke	12.08.2015
DRAWN	R. Mielke	12.08.2015
APPV'D		

TITLE: Heizelement-LB

BACH·RC Bach Resistor Ceramics GmbH

DWG NO. 5E-10000-15-96

A4

WEIGHT: 15.23 g | SCALE: 1:1 | SAP NO. | SHEET 1 OF 3

100 mm SCALE 1:1